



# UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/898,253  | 07/03/2001  | Claude Basso         | RAL920000099US1     | 1929             |
| 45503   | 7590        | 12/19/2005           | EXAMINER            |                  |
| DILLON & YUDELL LLP<br>8911 N. CAPITAL OF TEXAS HWY.,<br>SUITE 2110<br>AUSTIN, TX 78759 |             |                      | NGUYEN, CINDY       |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2161                |                  |

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/898,253

Applicant(s)

BASSO ET AL

Examiner

Cindy Nguyen

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9--24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments(filed 09/28/05)***

Applicant's arguments have been fully considered but they are not persuasive. Applicant's argue that Guha didn't discloses: means for constructing a search key by: generating a full match search increment comprising the binary representation of a data string element, wherein said data string element includes a plurality of non-delimiters between a pair of delimiters; and concatenating a pattern search prefix to said full match search increment to form said search key, wherein said pattern search prefix is a cumulative pattern search result of each previous full match search increment. In response, Guha clearly discloses: constructing a search key by: generating a full match search increment comprising the binary representation of a data string element, wherein said data string element includes a plurality of non-delimiters between a pair of delimiters as col. 7, lines 59 to col. 8, lines 22; and concatenating a pattern search prefix to said full match search increment to form said search key, wherein said pattern search prefix is a cumulative pattern search result of each previous full match search increment as col. 8, lines 12 to col. 9, lines 31.

Applicant's argue that Guha didn't discloses: means for returning to said constructing a search key, in response to finding a matching pattern within said lookup table; means for utilizing previous full match search result to process said data string in response to not finding a matching pattern within said lookup table. In response, Guha discloses: means for returning to said constructing a search key, in response to finding

a matching pattern within said lookup table (hash table) col. 9, lines 32-51; means for utilizing previous full match search result to process said data string in response to not finding a matching pattern within said lookup table as the second hash key is compared with secondary keys for items in the identified hash bucket, if any matches are found pointers in the match ...the negative result is return see col. 9, lines 32-51. therefore, the cited references, which considered separately or in combination teach all of the features of the claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-12, 14-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guha (US 6539373) in view of Irwin (US 6052683).

Regarding claims 9 and 17, Guha discloses: a system and a computer program product for performing a pattern match search for a data string having a plurality of characters separated by delimiters, said method comprising: means defining a subset of characters as delimiters such that all remaining characters are defined as non-delimiters (col. 8, lines 10-22, Guha);

Means for constructing a search key by: generating a full match search increment comprising the binary representation of a data string element, wherein said data string element includes a plurality of non-delimiters between a pair of delimiters (col. 8, lines 35-42, Guha); and

concatenating a pattern search prefix to said full match search increment to form said search key, wherein said pattern search prefix is a cumulative pattern search result of each previous full match search increment (col. 8, lines 35-60, Guha);

However, Guha didn't disclose: Means for performing a full match search within a lookup table utilizing said search key; means for returning to said constructing a search key, in response to finding a matching pattern within said lookup table; means for utilizing previous full match search result to process said data string in response to not finding a matching pattern within said lookup table. On the other hand, Irwin discloses: Means for performing a full match search within a lookup table utilizing said search key (col. 6, 38-63, Irwin); means for returning to said constructing a search key, in response to finding a matching pattern within said lookup table (col. 6, lines 52-63, Irwin); means for utilizing previous full match search result to process said data string in response to not finding a matching pattern within said lookup table (col. 9, lines 10-32, Irwin). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the step for performing a full match search within a lookup table utilizing said search key; for returning to said constructing a search key, in response to finding a matching pattern within said lookup table; for utilizing previous full match search result to process said data string in response to not finding a matching

pattern within said lookup table in the system of A as taught by B. The motivation being to enable the system provide an apparatus for performing an address lookup to find a longest matching prefix for an N-bit input address in a packet data communication system.

Regarding claims 10 and 18, most of the limitations of these claims have been noted in the rejection of claims 9 and 17 above, respectively. In addition, Guha/Irwin discloses: wherein said system further includes processing means for pointing to a character within said data string prior to constructing a search key (col. 9, lines 10-30, Guha).

Regarding claims 11 and 19, most of the limitations of these claims have been noted in the rejection of claims 10 and 18 above, respectively. In addition, Guha/Irwin discloses: wherein said constructing a search key further comprises:

Means for evaluating said character within said data string to determine whether or not said character is a delimiter (col. 7, lines 59 to col. 8, lines 22, Guha);

Means for in response to a determination that said character within said data string being a delimiter: delivering a full match search increment into a search key register, wherein said search increment comprises a binary representation of all non-delimiters between said delimiter and an immediately preceding delimiter (col. 8, lines 10-22, Guha); and

concatenating said pattern search prefix to said search increment within said search key element (col. 8, lines 10-22);

means in response to said character within said data string not being a delimiter for appending a binary representation of said search increment; and incrementing said pointer (col. 9, lines 10-30, Guha).

Regarding claims 12 and 20, most of the limitations of these claims have been noted in the rejection of claims 9 and 17 above, respectively. In addition, Guha/Irwin discloses: wherein said system further includes means for incrementing said search key to a next URL data string element in response to finding said matching pattern (col. 7, lines 46-57, Guha).

Regarding claims 14 and 22, most of the limitations of these claims have been noted in the rejection of claims 9 and 17 above, respectively. In addition, Guha/Irwin discloses: wherein said data string is a Universal Resource Indicator address, and said data string element is a URI element (col. 7, lines 59 to col. 8, lines 22, Guha).

Regarding claims 15 and 23, most of the limitations of these claims have been noted in the rejection of claims 14 and 22, above, respectively. In addition, Guha/Irwin discloses: wherein said delimiters include period characters or slash characters (col. 7, lines 59 to col. 8, lines 22, Guha).

Regarding claims 16, 24, most of the limitations of these claims have been noted in the rejection of claims 14 and 22, above, respectively. In addition, Guha/Irwin discloses: wherein said step of constructing a search key further include: means for scanning an IP data packet to determine a first URI element to be parsed (col. 7, lines

59 to col. 8, lines 22, Guha); means for initializing a URI pointer to a first character within said first URI element (col. 7, lines 59 to col. 8, lines 22, Guha); and means for initializing said pattern search prefix to zero (col. 7, lines 59 to col. 8, lines 22, Guha).

**Claims 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guha (US 6539373) in view of Irwin (US 6052683) in further in view of Bronstein et al. (US 6735670) (Bronstein).**

Regarding claims 13 and 21, most of the limitations of these claims have been noted in the rejection of claims 9 and 17 above, respectively. In addition, Guha/Irwin discloses: determining whether or not a full match for said search key exists within said a hash table by: hashing said search key to produce a hash key result (col. 8, lines 35-60, Guha). However, Guha/Irwin didn't disclose: indexing a hash table utilizing said hash key result to find a matching stored pattern; and resolving collisions in said hash table utilizing a pattern search control block. On the other hand, Bronstein discloses: disclose: indexing a hash table utilizing said hash key result to find a matching stored pattern (col. 7, lines 35-53, Bronstein); resolving collisions in said hash table utilizing a pattern search control block (col. 9, lines 39-53, Bronstein). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include step for indexing a hash table and resolving collisions in said hash table utilizing a pattern search control block in the system of Guha/Irwin as taught by Bronstein. The motivation being to enable the system provide the function operative to generated an



index in accordance with a key input, a hash table having a plurality of entries and adapted to store the elements in accordance with their corresponding indexes, and apply the index to the hash table and use the element generated in the event.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***1. Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 703-305-4698. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the

Art Unit: 2161

organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*CN*

Cindy Nguyen  
December 5, 2005

*Frantz Coby*  
**FRANTZ COBY**  
**PRIMARY EXAMINER**